

Train Route Decisions

Why was the Pacheco Pass selected as the preferred high-speed train alignment between the Central Valley and the Bay Area?

The Pacheco Pass alternative serving San Francisco and San Jose termini best meets the purpose and need for the proposed high-speed train system. Because:

1. The Pacheco Pass minimizes impacts on wetlands, waterbodies, and the environment.

The statewide high-speed train system should provide direct service to Northern California's major hub airport at SFO and major transit, business, and tourism center at downtown San Francisco. The Pacheco Pass alternative serving San Francisco and San Jose termini has the least potential environmental impacts overall while providing direct high-speed train service to downtown San Francisco, SFO, and the San Francisco Peninsula (Caltrain Corridor) and minimizes construction issues which can lead to delay and cost escalation.

The Pacheco Pass enables San Francisco, SFO, and the San Francisco Peninsula to be directly served without a crossing of the San Francisco Bay. Altamont Pass alternatives requiring a San Francisco Bay crossing would have the greatest potential impacts on the San Francisco Bay and have high capital costs and constructability issues. The Dumbarton Crossing would also have the greatest potential impacts on wetlands and the Don Edwards San Francisco Bay National Wildlife Refuge. To implement these alternatives, extensive coordination would be required with the USACE under Section 10 of the Rivers and Harbors Act and the California Coastal Commission, and the Bay crossing would be subject to the USACE, CDFG, and BCDC permit process. A number of agencies, organizations, and individuals have raised concerns regarding to the construction of a high-speed train crossing of the San Francisco Bay. These include the MTC, BCDC, USEPA, USFWS, Congress members Zoe Lofgren, Michael Honda, Anna Eshoo, and Tom Lantos, State Senators Elaine Alquist and Abel Maldonado, and Assembly member Jim Beale as well as Santa Clara County, San Mateo County Transit District (SamTrans), San Mateo County Transportation Authority (TA), Peninsula Corridor (Caltrain) Joint Powers Board (JPB), San Francisco Bay Trail Project, San Jose Chamber of Commerce, the City of San Jose, the City of Oakland, and Don Edwards (Member of Congress, 1963-1995).

While a considerable number of comments have raised concerns about potential environmental impacts for Pacheco Pass alternatives (in particular relating to potential impacts on the GEA), high-speed train via the Pacheco Pass is feasible and preferred because it would result overall in fewer impacts when compared to the Altamont Pass alternatives with a Bay crossing. Additionally, the Pacheco Pass alternative would include various measures to avoid, minimize, and/or mitigate environmental impacts to the extent feasible and would offer opportunities for environmental improvements along the high-speed train right of way that could be accomplished during project design, construction, and operation, including through use of tunnels and aerial structures where appropriate. This contrasts with the more uncertain regulatory approvals that would be needed for crossings of San Francisco Bay and the Don Edwards San Francisco Bay National Wildlife Refuge. Identification of a preferred alternative in the Final Program EIR/EIS is required for NEPA compliance. Since the identified preferred alternative would have the least overall environmental impacts, it is also identified as the environmentally superior alternative for CEQA compliance and the environmentally preferable alternative under NEPA.

2. The Pacheco Pass best serves the connection between the Northern and Southern California.

Operational benefits result in greater frequency and capacity:

San Francisco and San Jose would be served with one high-speed train alignment along the Caltrain corridor providing the most frequent service to these destinations, whereas the most promising Altamont Pass alternatives would split high-speed train services (express, suburban express, skip-stop, local, regional) between two branch lines to serve San Jose and either San Francisco or Oakland—reducing the total capacity of the system to these markets. The proposed high-speed train system already has two locations where there are branch splits (north of Fresno—to Sacramento and the Bay Area, and south of Los Angeles Union Station—to Orange County and the Inland Empire). Avoiding additional branch splits in the high-speed train alignment would benefit train operations and service.

Provides a superior connection between the South Bay and Southern California

The Pacheco Pass enables the shortest connection to be constructed between the South Bay and Southern California with the quickest travel times between these markets. A southern Santa Clara County high-speed train station increases connectivity and accessibility for the South Bay and the three county Monterey Bay area.

Fewer stations between the Major Metropolitan Areas

The core purpose of the high-speed train system is to serve passenger trips between the major metropolitan areas of California. There is a critical tradeoff between the accessibility of the system to potential passengers that is provided by multiple stations and stops, and the resulting high-speed train travel times. Additional or more closely spaced stations (even with limited service) would lengthen travel times, reduce frequency of service, and the ability to operate both express and local services. The Pacheco Pass has the advantage of fewer stops through the high-speed trunk of the system between San Francisco or San Jose and Southern California, the most populated regions of the state.

Between Merced and Gilroy, the high-speed trains will be maintaining speeds well over 200 mph. The fact that there is no significant population concentrations between Merced and Gilroy along the Pacheco Pass is a positive attribute since there are fewer communities and hence fewer community impacts. Additionally there will be no high-speed train station between Gilroy and Merced. As a result, the Pacheco Pass minimizes the potential for sprawl inducement as compared with the Altamont Pass.

Minimizes Logistical Constraints

The Pacheco Pass avoids construction issues and logistical constraints through the Tri-Valley and Alameda County. The Tri-Valley PAC has raised serious concerns with all the Altamont Pass alternatives regarding land use compatibility and right-of-way constraints and the need for aerial structures through the Tri-Valley. All Altamont Pass alternatives have tunneling/seismic issues (Calaveras Fault) in the Pleasanton Ridge/Niles Canyon area as well as seismic issues in the East Bay (Hayward Fault). Both the City of Fremont and the City of Pleasanton are opposed to high-speed train alternatives through these cities because of potential environmental issues, right-of-way constraints, and other logistical issues.

3. The Pacheco Pass best utilizes the Caltrain corridor.

The Pacheco Pass alternative would enable the early, incremental implementation of the entire Caltrain Corridor section between San Francisco, San Jose, and Gilroy. The high-speed train system is complimentary to Caltrain and would utilize the Caltrain right-of-way and share tracks with express Caltrain commuter rail services. Caltrain intends to use lightweight, electrified trains that would be compatible with high-speed train equipment. Because it utilizes the Caltrain corridor, environmental impacts would be minimized. The Authority's phasing plan identifies the Caltrain Corridor (between San Francisco and San Jose) as allowing the Authority to maximize the use of local and regional funds dedicated to train service improvements, and thereby helping to reduce the need for state funds.

4. The Pacheco Pass is strongly supported by the Bay Area region, cities, agencies, and organizations.

Many of the Bay Area local and regional governments, transportation agencies, and business organizations strongly support the Pacheco Pass alternative to San Francisco via San Jose and the Caltrain Corridor. The Pacheco Pass supporters include the Metropolitan Transportation Commission (MTC), the cities of San Francisco, San Jose, Redwood City, Fremont, Morgan Hill, Cupertino, Sunnyvale, Gilroy, and Salinas; the counties of San Francisco, Santa Clara, San Mateo, and Monterey; Congress members Lofgren, Honda, Eshoo, and Lantos; Assembly member Beale; State Senators Alquist and Maldonado; the San Francisco County Transportation Agency; the Santa Clara Valley Transportation Authority (VTA); Peninsula Corridor (Caltrain) Joint Powers Board (JPB); San Mateo County Transit District (SamTrans); San Mateo County Transportation Authority (TA); Monterey County Transportation Agency; Alameda County Congestion Management Agency; Alameda County Supervisor Scott Haggerty; the San Jose, the San Francisco, Redwood City, and the San Mateo County Chamber of Commerce; the Silicon Valley Leadership Group; and a number of members of the public representing themselves. This support is critical towards implementing this major infrastructure project through the heavily urbanized Bay Area linking San Francisco, San Jose and Gilroy.

The Central Valley (including Sacramento) and many transportation and environmental organizations are united in strongly preferring the Altamont Pass. However, to reach the major markets in the Bay Area, the Altamont Pass alternatives must go through Alameda County, including Livermore and Pleasanton in the Tri-Valley and Fremont. The Tri-Valley PAC (a partnership that includes the cities of Dublin, Livermore, Pleasanton, Danville, San Ramon, and Tracy along with transportation providers LAVTA, ACE, and BART) has raised serious concerns regarding right-of-way constraints and the need for aerial structures through the Tri-Valley. The Tri-Valley PAC supports high-speed train service through the Pacheco Pass and "regional overlay service provided through the Altamont pass." They believe that this option may present the best way of addressing their concerns and delivering optimal high-speed train service to the region as a whole. The Alameda County Congestion Management Agency and Alameda County Supervisor Scott Haggerty both support the MTC recommendation for the Pacheco alignment via the San Francisco Peninsula as the main high-speed train express line between Northern and Southern California while also supporting upgraded interregional services between the Bay Area—Sacramento and the San Joaquin Valley via the Altamont Pass. The City of Fremont opposes the Altamont Pass alternative as does the City of Pleasanton although Pleasanton remains "open" to terminating Altamont alternatives in Livermore. The concerns through Alameda County are significant enough that the MTC, Alameda County Congestion Management Agency, and Alameda County Supervisor

Scott Haggerty have requested that “the CHSRA also evaluate an alternative in the Altamont Corridor that terminates HSR at a proposed BART Livermore station”—even with the main high-speed train express line using the Pacheco Pass.

What kind of project is the Authority pursuing in the Altamont Corridor?

The Authority is pursuing a partnership with “local and regional agencies and transit providers” to propose and develop a joint-use (“Regional Rail” and high-speed train) infrastructure project in the Altamont Pass corridor—as advocated in MTC’s recently approved “Regional Rail Plan for the San Francisco Bay Area.” The Altamont Pass enables quick travel times between Sacramento/northern San Joaquin Valley and the Bay Area with great potential for serving long-distance commuters between these regions. Regionally provided commuter overlay services would require regional investment and would potentially need operational subsidies. The Authority cannot unilaterally plan for regionally operated commuter services.

“Regional Rail” in the Altamont Pass corridor is being pursued as an independent project to satisfy a different *purpose and need*¹ from the proposed high-speed train system, but that would also accommodate high-speed train service. The Authority’s pursuit of improved regional rail service in the Altamont Pass corridor is dependent on forming a partnership with the region for the joint-use infrastructure. The Authority is spearheading future environmental studies and work in partnership with other agencies to secure local, state, federal, and private funding to develop a joint-use infrastructure project in the Altamont Corridor, and has recommended that this corridor be added as part of the high-speed train funding package.

The Authority’s analysis suggests that Altamont high-speed train overlay service might terminate in Oakland and/or San Jose via the East Bay, whereas the Regional Rail Plan recommends it cross the Bay at Dumbarton. MTC also recommends future study of terminating this service in Livermore (connecting to an extended and enhanced BART system). As a part of future studies, the Authority will need to work with agencies, organizations, and the public to define the appropriate alternatives to be investigated for “Regional Rail”/high-speed train in the Altamont Pass to serve long-distance interregional commuters. The Authority’s objective is that the infrastructure would be electrified, fully grade-separated, and compatible with and shared by high-speed train services. Having the project provide connectivity and accessibility to Oakland and Oakland International Airport is a crucial objective for the Authority.

To lay the groundwork for a future “Regional Rail”/HIGH-SPEED TRAIN Altamont Pass project, the Authority will work with ACE, SJRRC, San Joaquin County Council of Governments, the Tri-Valley Pac, Alameda County, Santa Clara County, and others to get the Altamont “Regional Rail”/high-speed train project identified in the update to the 2035 Regional Transportation Plan (RTP) and funds programmed in the 2035 RTP and RTIP. The Authority will lead a Altamont “Regional Rail”/high-speed train Steering Committee that will include MTC, and agencies and transit providers along the Altamont Corridor project study that will address the Altamont Pass, the East Bay connections and stations in partnership, and provide the information necessary for the Authority to undertake an environmental study for this project.

¹ As defined in CEQA and NEPA implementing regulations, procedures, and guidelines.

Why was the route via Palmdale selected between the Central Valley and Los Angeles?

As part of the Statewide Program EIR/EIS document (certified November 2005), the Authority selected the alignment through the SR-58/Soledad Canyon Corridor (Antelope Valley) with an high-speed train station at Palmdale as the preferred option for crossing the Tehachapi Mountains between the Central Valley and Southern California. Although the longer Antelope Valley alignment would add about 10 minutes to express service travel times between northern and southern California and have less intercity ridership potential (trips between regions) than the I-5 alignment option, it would have fewer potential environmental impacts, it would be less subject to seismic activity and have considerably less tunneling and thereby have fewer constructability issues, and would increase connectivity and accessibility.

The most significant difference in regards to potential environmental impacts between the Antelope Valley option and I-5 alignments is in regards to major parklands. The Antelope Valley alignment would not go through major parks. In contrast, the I-5 options would potentially impact Fort Tejon Historic Park, Angeles and Los Padres National Forests, Hungry Valley State Vehicular Recreation Area, Pyramid Lake and other local parks. The Antelope Valley alignment would also have a lower overall potential for water-related impacts, less potential impacts to wetlands and non-wetland waters, and was forecast to have less impacts on urbanized land and farmland conversion than the I-5 options (because the I-5 options would result in more growth in the Central Valley).

The Antelope Valley alignment traverses less challenging terrain than the I-5 options, which would result considerably less tunneling overall (13 miles [21 km] of tunneling for the Antelope Valley option versus 23 [37 km] miles for I-5 options), and considerably shorter tunnels (maximum length of 3.4 miles [5.5 km] for the Antelope Valley option versus two tunnels greater than 5 miles [8 km] for the I-5 options) which would result in fewer constructability issues. Although the Antelope Valley option is about 35 miles longer than the I-5 alignment options, it is estimated to be slightly less expensive to construct as a result of less tunneling through the Tehachapi Mountains. In addition, due to its more gentle gradient, geology, topology and other features, the SR-58/Soledad Canyon Corridor offers greater opportunities for using potential high-speed train alignment variations, particularly through the mountainous areas of the corridor, to avoid impacts to environmental resources. In contrast, the more challenging terrain of the I-5 Corridor greatly limits the ability to avoid sensitive resources and seismic constraints. The alignment optimization system (*Quantm*) that was utilized to identify and evaluate approximately 12 million alignment options for each mountain crossing could only find one practicable alignment option through the Tehachapi Mountains for the I-5 Corridor.

Additional seismic hazards relating to the I-5 alignment that further differentiate these options from the Antelope Valley alignment. Since the I-5 alignment options follow the San Gabriel fault for over 20 miles and cross through the area where the San Andreas and Garlock faults meet, they would have greater seismic hazard and constructability issues than the Antelope Valley option. The Authority concluded that there are additional seismic hazards and risks for the I-5 alignment options from paralleling the San Gabriel fault, and also from traversing the "triangle" where the San Andreas and Garlock faults meet.

The Antelope Valley option would provide direct service to the Palmdale/Lancaster area, which increases the connectivity and accessibility of the high-speed train network. The Antelope Valley is the fastest growing area in Los Angeles County and currently regional population forecasts estimate the Antelope Valley population could exceed 1 million by the year 2020. The high-speed train system would also provide connectivity to Palmdale Airport and Metrolink commuter rail service.

Public and agency support for the Antelope Valley option is strong in Los Angeles County because of the increased connectivity and accessibility it would provide for the Antelope Valley. Agencies which have indicated support for the Antelope Valley alignment include: the City of Los Angeles, the County of Los Angeles, Los Angeles County Metropolitan Transportation Authority (LAMTA), Los Angeles Department of Transportation, Southern California Association of Governments (SCAG), the City of Palmdale, City of Lancaster, County of Kern, Kern Council of Governments, and the City of Bakersfield.

Why not use Interstate 5 (I-5) throughout the Central Valley?

Review of the I-5 and State Route 99 (SR-99) corridors showed that, although the SR-99 corridor options would be slightly more costly than the I-5 corridor options, the SR-99 corridor would have higher ridership potential, providing far better service to the growing Central Valley population, while offering fast, competitive service between the San Francisco Bay Area and Los Angeles metropolitan regions.

The I-5 corridor has very little existing or projected population between the San Francisco Bay Area and Los Angeles. In contrast, according to the California Department of Finance, well over 3 million residents are projected to live between Fresno and Bakersfield along the SR-99 corridor by 2015, which directly serves all the major Central Valley cities. Residents along the SR-99 corridor lack a competitive transportation alternative to the automobile, and detailed ridership analysis shows that they would be ideal candidates to use a high-speed train system. The I-5 corridor would not be compatible with current land use planning in the Central Valley that accommodates growth in the communities along the SR-99 corridor.

Express trains in the SR-99 corridor would connect San Francisco to Fresno in just 1 hr and 20 min, and Fresno to Los Angeles in 1 hr and 24 min. This corridor would link San Francisco to Bakersfield in about 1 hr and 50 min, and Bakersfield to Los Angeles in 54 min. The SR-99 corridor was estimated to have 3.3 million more intermediate-market ridership (passengers to or from the Central Valley) per year than the highest I-5 corridor projections (CRA 1999). Therefore, while SR-99 corridor travel times would be 11 to 16 min longer than the I-5 alternatives between Los Angeles and San Francisco, overall ridership and revenue for the SR-99 corridor would be higher.

There is strong public support for the SR-99 corridor. In particular, there is overwhelming support for the SR-99 corridor in the Central Valley. The 1996, when the Intercity High-Speed Rail Commission was comparing the I-5, and SR-99 corridors, it received resolutions of support for the SR-99 corridor from nearly every Central Valley city, county, and regional government.

In summary, while the I-5 corridor could provide better end-to-end travel times compared to the SR-99 corridor, the I-5 corridor would result in lower ridership and would not meet the current and future intercity travel demand of Central Valley communities as well as the SR-99 corridor. The I-5 corridor would not provide transit and airport connections in this area, and thus failed to meet the purpose and need and basic objectives of maximizing intermodal transportation opportunities and improving the intercity travel experience in the Central Valley area of California as well as the SR-99 corridor. For these reasons the I-5 corridor was dismissed from further consideration in the Statewide Program EIR/EIS.

Is freight right-of-way required for the system?

No. While the Authority has attempted to minimize environmental impacts by locating alignment alternatives within or adjacent to existing transportation rights-of-way, the Authority's legal environmental EIR/EIS documents do not assume or rely on the availability of existing transportation rights-of-way for their analysis.

To minimize potential environmental impacts from the high-speed train system, the Authority's objective has been to maximize the use of existing transportation corridors and rights-of-way for the high-speed train system. Consistent with this objective, extensive portions of the alignment alternatives were described and analyzed as if they were placed within or adjacent to existing rail or highway rights-of-way, rather than on new alignment. Evaluations for the Statewide High-Speed Train system Program EIR/EIS and for the Bay Area to Central Valley High-Speed Train Final Program EIR/EIS have consistently shown a potential for fewer significant environmental impacts along existing transportation facilities than on new alignments through both developed and undeveloped areas.

Figures from the Final Program EIR/EIS documents depict typical cross sections for high-speed train facilities at grade, on an elevated structure, and where twin tunnels might be necessary. These figures show maximum proposed rights-of-way of 100 feet, 50 feet, or 120 feet for these facilities, respectively. At the programmatic level, this EIR has analyzed the impacts of constructing and operating the high-speed train system along the proposed alignment alternatives conservatively, by evaluating direct and indirect impacts within a wide band that exceeds the maximum proposed high-speed train right-of-way, whether in an existing transportation right-of-way or adjacent to it.

For example, for biological impacts, the EIR defines the study area for direct biological impacts as 50 feet on either side of the alignment, and for indirect impacts as 1,000 feet in urban areas and 0.25 mile in rural areas on each side of the alignment. At the project level, when detailed field conditions, resource data, and site-specific facility design information become available, certain impacts disclosed in the Program EIR are expected to be far less in those circumstances when the actual final footprint of high-speed train track can be located within existing rights-of-way, rather than adjacent to them.